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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,387	01/22/2002	Jeffrey C. Burnham	38934.0008	7016

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EXAMINER
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CLARDY, S

ART UNIT	PAPER NUMBER
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1616

DATE MAILED: 08/14/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
10/051,387

Applicant(s)  
Burnham

Examiner  
S. Mark Clardy

Art Unit  
1616



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jun 30, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22, 27-60, and 65-69 is/are rejected.
- 7) ☒ Claim(s) 23-26 and 61-64 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 8 6) ☐ Other:

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Claims 1-69 are pending in this application which claims the benefit under 35 USC 119(e) of US Provisional Applications No. 60/272,469, filed March 2, 2001, and 60/262,631, filed January 22, 2001. International application PCT/US02/01511 claims priority to the same provisional applications.

Applicant's claims are drawn to:

1. A biosolid granule comprising at least one layer (claims 41-60), or which is a multilayered delayed release granule (claims 1-22 and 27), in which the layer(s) may comprise various materials:
  - a. inorganic compounds, polymeric materials, organic materials, fertilizers, polysaccharides, etc. (claim 5, 45),
  - b. polymeric coating materials (claim 14, 51),
  - c. micronutrients (claims 15-20, 52-57),
  - d. microorganisms (claims 21, 58) which are useful for bioremediation (claims 22, 59),
  - e. toxins (claim 27, 60) such as pesticides, herbicides, insecticides (method claim 32, 69);
2. Methods of bioremediation (claims 23-26, 61-67);
3. Methods of fertilization or pesticidal use (claims 28-32, 34, 68, 69);
4. Methods of non-specific delayed release (claims 33, 35-37);
5. Methods of making the granules (claims 38-40).

The previous rejections under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 103(a), are withdrawn in response to applicant's comments and Amendment B, filed June 6, 2003.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 6, 7, 38, 41, 42, 46, and 47 are rejected under 35 U.S.C. 102(a), (b), and (e) as being anticipated by Lipert (US 5,862,610).

Lipert teaches a method of coating dry pellets made of waste biosolids with additional waste biosolids. In the reprocessing method, rejected pellets which fail to meet density and size requirements are returned for coating with additional biosolid material to produce acceptable pellets (abstract, columns 1-2). The pellets are to be reprocessed to a size in the range of 3-4 mm, with a dryness of about 95% (col 2, lines 63-65), and are useful directly as a general slow release nitrogen fertilizer, or for combination with other fertilizer materials (col 1, lines 17-20).

Claims 1, 2, 4-6, 13-17, 21, 22, 27-32, 38, 41, 42, 44-46, 50-55, 58-60, and 65-69 are rejected under 35 U.S.C. 102(e) as being anticipated by Varshovi (US 2002/0053229).

Varshovi teaches organic based dry pelletized or granulated (para 25) fertilizer compositions comprising an organic base material such as biosolids or activated sludge (16) to which may be added additional components such as beneficial microorganisms (17-19), plant growth regulators and pesticides (20), plant nutrients (page 3), including macronutrients (NPK: 34) and micronutrients (12, 35). The additional materials may be added to the granular compositions by mixing or coating, i.e., spraying onto the granular substrate (23-25). The size of the solid material ranges from 20 to 200 mesh (i.e., 0.075 to 0.85 mm: para 38)

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The rejection under which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-22, 27-60, and 65-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Lipert, Varshovi, Waldman et al (US 6,284,278, equivalent PCT: WO 98/56735), Diping et al (US 5,849,060), Cunningham (US 5,340,376), and Burger et al (DE 41 27 459).

Lipert and Varshovi have been discussed above; both disclose biosolid containing granular fertilizer compositions.

Waldman et al, again, teach controlled release compositions comprising water soluble granulated chemicals such as fertilizers, salts, pesticides which are coated in a thermoplastic biodegradable and inert polymer composition (abstract).

Diping et al, again, teach controlled release fertilizer comprising a water-soluble fertilizer nucleus surrounded with plant nutrient coating layers with limited solubility (abstract).

Cunningham, again, teaches controlled-release microbe nutrients, which are the same as those which are useful as plant nutrients (columns 5-6), which are surrounded with a controlled-release coating (columns 6-7). The compositions are especially useful in providing nutrients to bioremediation microbes (columns 7-8).

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Burger et al, again, teach fertilizer granules which are coated in multiple polymeric layers which control the release of the fertilizer materials.


One of ordinary skill in the art would be motivated to combine these references because they disclose granular compositions for providing controlled release of agricultural materials.

Thus it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have made granular materials comprising a core material (inorganic compounds, fertilizers, pesticides, micronutrients), surrounded by one or more layers that provide a controlled release of the coated material. Further, Lipert and Varshovi teach that biosolid materials are useful in making such granular fertilizer compositions.

Claims 23-26, and 61-64 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. No prior art is noted in which biosolid containing granular material has been used in bioremediation methods.

No unobvious or unexpected results are noted; no claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is (703) 308-4550.

  
S. Mark Clardy  
Primary Examiner  
AU 1616

August 13, 2003